Course Outline

Course: STAT 301(Introduction to Probability and Statistics)

Prof. Abe Mirza

Email: <u>mirzaam@arc.losrios.edu</u> (In emailing be sure in the subject line indicate which section you belong to.)

Course Prerequisite: Mathematics 120 with a grade of "C" or better, or placement through assessment process.

Important: You need to go to my website and download the pages related to each part.

Class website: http://ic.arc.losrios.edu/~mirzaam/Statistics/



Text Book: Elementary Statistics by Larson ISBN: 9780132424332

YOU NEED TO GO TO MY WEBSITE,

- 1) TO PRINT COURSE MATERIALS
- 2) **CHECK** THE **ANNOUNCMENT** on a **daily bases** AND YOUR CLASS REPORT ON REGULAR BASIS.
- 3) BE SURE YOU REFRESH THE WEBSITE PAGES (BY USING F5 KEY) EACH TIME YOU GO TO MY WEBSITE

Required Material:

- 1. A two- variable statistics calculator (TI-83 or better).
- 2. Regular Graph Paper
- 3. Scantron: 882-E (4 sheets) for tests and 815-E (15 sheets) for quizzes
- 4. A binder

The course is divided into 4 parts.

Part 1	Part 2	Part 3	Part 4		
Descriptive Statistics	Probability	Central Limit Theorem	Test of		
Linear Regression	Binomial Probability	Estimation	Hypothesis		
Basic Probability	Normal Distribution				
Q1-Q4	Q5-Q7	Q8-Q11	Q12-Q15		
Test 1	Test 2	Test 3	Test 4		

Quizzes:

There will be 15 quizzes each for 10 points. <u>There will not be no make up for missing any quizzes</u> You need 815-E Scantron for each quiz

Projects:

There will be two projects that are posted on my web. The due date will be announced in class or will be posted on the announcement link. <u>After the due date no projects will be accepted.</u>

Tests:

There will be a total of 4 tests (including the final) given for the entire summer term. All the tests weigh **100 points including the final.** <u>There will not be no mak up for missing any test</u>, so if by any unexcused reason you miss submitting a test on due date, then you will be receiving a score of zero for it. The final will be partially comprehensive.

Rules for using the Scantron:

- 1. Do not fold it
- 2. If you make a mistake be sure you erase the incorrect answer completely otherwise if the machine reads it as two answers you will not be credited for the correct one.
- 3. Your answer should be on Scantron only you can not claim any credit if you forget to transfer you answers from question sheet onto Scantron

Attendance Requirements: Attendance Is Mandatory! (AIM) for taking the tests and the quizzes



If your name appears on the roster as being enrolled in this course, it is your responsibility to follow the proper procedures, in a timely manner, if you decide to withdraw. Acquaint yourself with the dates for withdrawing and any associated financial requirements as detailed in the school catalog. The instructor may drop students for not attending class for a total of 2 unexcused absences during the

The instructor may drop students for not attending class for a total of 2 unexcused absences during the summer term. Such drop is purely within the discretion of the instructor, if you decide not to continue at

any time, you must officially withdraw, do not count on, nor ask the instructor, to drop you. At the end of the term, the instructor MUST issue a grade to all students listed on the final roster. An "**excuse**" is an official document from either your physician or the school Health Center attesting to your inability to attend class on the meeting date(s) in question.

Absolutely **no cell phones** or **PDA** should be used in the entire class period.

Any electronic communication devices, pagers, cell phone, etc., which ring during class time must be turned off for the entire class period.

Academic Honesty

Each student is responsible for understanding the policies on academic honesty set forth by American River College and the Los Rios Community College District. Any student found in violation of these policies will be held strictly accountable. Please remember that using a "term paper service" or having another student write your paper is plagiarism. Use of the instructor's copy of the text is considered a violation of the academic honesty policy.

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Quizzes	150 Points	Α	90%	-	100%	of possible points
Projects	20 Points	В	80%	-	90%	of possible points
Tests: 3@100	300 Points	С	70%	-	79%	of possible points
Final:	100 Points	D	60%	-	69%	of possible points
Total:	570 Points	F	0%	-	59%	of possible points

Points Distribution

Grading Policy:

COURSE COVREAGE

1.0 Introduction to Statistics

1.1 Overview

1.2 Types of Data

1.3 Critical Thinking

2.0 Describing, Exploring, and Comparing Data

- 2.1 Overview
- 2.2 Frequency Distributions
- 2.3 Visualizing Data
- 2.4 Measures of Center
- 2.5 Measures of Variation
- 2.6 Measures of Relative Standing
- 2.7 Exploratory Data Analysis (EDA)

3.0 **Probability**

- 3.1 Overview
- 3.2 Fundamentals
- 3.3 Addition Rule
- 3.4 Multiplication Rule: Basics
- 3.5 Multiplication Rule: Complements and Conditional Probability

4.0 Probability Distributions

- 4.1 Overview
- 4.2 Random Variables
- 4.3 Binomial Probability Distributions
- 4.4 Mean, Variance and Standard Deviation for the Binomial Distribution

5.0 Normal Probability Distributions

- 5.1 Overview
- 5.2 The Standard Normal Distribution
- 5.3 Applications of Normal Distributions
- 5.4 Sampling Distributions and Estimators
- 5.5 The Central Limit Theorem
- 5.6 Normal as Approximation to Binomial

6.0 Estimates and Sample Sizes

- 6.1 Overview
- 6.2 Estimating a Population Proportion
- 6.3 Estimating a Population Mean: σ Known
- 6.4 Estimating a Population Mean: σ Not Known

7.0 Hypothesis Testing

- 7.1 Overview
- 7.2 Basics of Hypothesis Testing
- 7.3 Testing a Claim About a Proportion
- 7.4 Testing a Claim About a Mean: σ Known
- 7.5 Testing a Claim About a Mean: σ Not Known

8.0 Inferences from Two Samples

- 8.1 Overview
- 8.2 Inferences About Two Proportions
- 8.3 Inferences About Two Means: Independent Samples
- 8.4 Inferences from Matched Pairs

9.0 Correlation and Regression

- 9.1 Overview
- 9.2 Correlation
- 9.3 Regression

10.0 Chi-Square and Analysis of Variance

- 10.1 Overview
- 10.2 Multinomial Experiments: Goodness-of-Fit
- 10.3 Contingency Tables: Independence and Homogeneity
- 10.4 Analysis of Variance